unitech

MS337H Hand Held Scanner
User's Manual

V1/20090730

TABLE OF CONTENTS

Introduction 1

Bar Code Configuration Methods 2

Scanner Operation 3

Scan Buffers 3
Redundant Scans 4
Miscellaneous Decode Features 5
Same Symbol Time Outs 5
LED Options 5
Beeper Options 6
Beeper Options 7
Data Transmission Delays 7
Communication Time Out Options 8
Host Scanner Commands 9
Host Scanner Commands 10
Presentation and Trigger Modes 11
Omnidirectional and/or Linear Scanner Modes 12
Aiming and Illumination 14
Data Output 15
Character Suppression 16
Character Suppression 17
Same Symbol Timeouts 18

Code Types and Decode Rules 19

UPC/EAN 19
CODE 128 20
CODE 39 21
2 OF 5 CODES 23
CODABAR 25
CODE 93 25
CODE 11 26
TELEPEN 26
PLESSEY CODES 27
ISBT CODE 128 IMPLEMENTATION 28
RSS BAR CODE IMPLEMENTATION 29
RSS Limited Bar Codes 30
RSS Expanded Bar Codes 30
DATA MATRIX 31
QR CODE 34

MaxiCode 34
Aztec 35
Postal 37
Codablock Options 40
PDF Options 40
Additional Decode Features 41
Configurable Code Lengths 42
Supplements 44
Prefixes/Suffixes 48
User Configurable Prefixes, All Data 48
User Configurable ID Characters, Code Specific 49
Standard Prefix Characters 51
Standard Suffix Characters 53
Longitudinal Redundancy Check 54
Block Check Character 54
Character Replacements 55
User Configurable Suffixes, All Data 56
Special Formats 57
Code Formatting 58
UPC/EAN Formatting 58
Codabar Formatting 60
Code 39 Formatting 61
Code 11 Formatting 61
Telepen 61
Plessey 62
2 of 5 Code Formatting 62
USB 63
Keyboard 64
Code Bytes Usage 71
Code Bytes 0-9 71
Reserved Codes 72
Code Type Table 72
Code Type Table 73
Code Type Table 74
ASCII Reference Table 75
ASCII Reference Table 76
Extended Key Code Reference Table 79
Need To Start Over? 82

INTRODUCTION

This product MS337H which is based on MS337 specification. It has high resolution-1.23 mega pixel sensor and provide an effective solution for capturing high-quality images and decoding barcode in existing and new application with hand-held scanners. Besides ,MS337H use antimicrobial material in surface of case to restrain bacteria and microbe.MS337H is designed specifically for health-care market.

MS337H is designed by soft color-blue and white. It can make operator and patient comfortable.

Every bar code with an asterisk (*) is a default setting.
Bar codes with a tilde (~) require the *Multi-Code* configuration method.

BAR CODE CONFIGURATION METHODS

Single-Code Method

Most features can be enabled or disabled using the *Single-Code Method*.

1. Power up the scanner.
2. Scan the bar code for the desired feature.

Observe a multi-toned, “save setting” beep that indicates the configuration has been saved to NOVRAM.

Multi-Code Method

All features can be enabled or disabled using the *Multi-Code Method*.
A feature marked with a tilde (~) requires the *Multi-Code Method*.

1. Power up the scanner.
2. Scan the *enter/exit configuration mode* bar code (3 beeps).
3. Scan the bar code for the desired feature (1 beep).

   Multiple features can be enabled/disabled before scanning the *enter/exit configuration mode* bar code.

4. Scan the enter/exit configuration mode bar code (3 beeps) and save the new configuration.

   To abort a configuration change, power off the scanner before scanning the enter/exit code.

Enter/Exit Configuration Mode

Scan Buffers

* **1 Scan Buffer** - The scanner will scan one bar code in the scan field and not scan again until the bar code is removed from the scan field for the duration of the same symbol time out.

---

2 Scan Buffers - The scanner will scan 2 bar codes in the scan field one time each. These 2 bar codes will not be scanned again and until they are removed from the scan field for the duration of the same symbol time out.

---

3 Scan Buffers - Same function as 2 Scan Buffers, but 3 bar codes are in the scan field.

---

4 Scan Buffers - Same function as 2 Scan Buffers, but 4 bar codes are in the scan field.

Redundant Scans

* **0 Redundant Scans** - Requires 1 good decode for a *good scan*.

---

1 Redundant Scan - Requires 2 consecutive decodes of the same bar code data for a *good scan*.

---

2 Redundant Scans - Requires 3 consecutive decodes of the same bar code data for a *good scan*.

---

3 Redundant Scans - Requires 4 consecutive decodes of the same bar code data for a *good scan*.

---

4 Redundant Scans - Requires 5 consecutive decodes of the same bar code for a *good scan*.

---

5 Redundant Scans - Requires 6 consecutive decodes of the same bar code for a *good scan*.

---

6 Redundant Scans - Requires 7 consecutive decodes of the same bar code for a *good scan*.

---

7 Redundant Scans - Requires 8 consecutive decodes of the same bar code for a *good scan*.

Miscellaneous Decode Features

* **Optional Same Symbol Check** - Requires 1 different character between successive bar codes to consider the bar code “new”.

Normal Same Symbol Check - Requires 3 different characters between successive bar codes to consider the bar code “new”.

Same Symbol Time Outs

The length of time before a bar code can be rescanned after it is removed from the scan field is user-configurable in increments of 50 msecs to 6350 msecs (6.35 sec).

~ **Variable Same Symbol Time Out** - In configuration mode, scan this bar code followed by the appropriate code byte sequence to set the same symbol time out duration.

No Same Symbol Time Out

Infinite Same Symbol Time Out - The scanner will not repetitively scan the same bar code. This option overrides the symbol rescan time-outs.

LED Options

Flash Green LED if Rescan Allowed - This indicates same symbol timeout has elapsed.

---

* **Do Not Flash Green LED if Rescan Allowed**

Reverse LED Functions - Red = Laser On
Green = Good Read

---

* **Normal LED Functions** - Green = Laser On
Red = Good Read

Beeper Options

* **Normal Tone**

Optional Tone 1

Optional Tone 2

Optional Tone 3

Optional Tone 4

Optional Tone 5

Optional tone 6

No Beep

---

* **Beep Once on Supplements**

Beep Twice on Supplements

Enable Fast Beep

---

* **Disable Fast Beep**

Beep on BEL Command - The scanner beeps when it receives a BEL character from the host. If a number is sent within 200 msecs before the BEL character, the scanner will beep that number of times.

Beeper Options

*** Ignore BEL Command**

Enable Light Pen Toggle During Beep - The scanner beeps and toggles the light pen data line on a successful decode. This drives a good read indicator.

*** Disable Light Pen Toggle During Beep**

Data Transmission Delays

Use these codes to select the amount of delay between sending data characters from the scanner to the host. This helps prevent the scanner from overflowing host-input buffers.

*** 1 msec Intercharacter Delay**

---

10 msec Intercharacter Delay

---

25 msec Intercharacter Delay

~ Variable msec Intercharacter Delay - Scan this bar code and a sequence of code bytes to set the delay between characters sent to the host system (range from 1 to 255 msecs.).

No Intercharacter Delay

~ Variable Inter-Record Delay

Turn Off Laser During Inter-Record Delay

*** Leave Laser On During Inter-Record Delay**

Communication Time Out Options

Enable Communications Time Out

---

* **Disable Communications Time Out**

---

* **Beep Before Transmit**

Beep After Transmit

~ **Variable Communications Time Out**

---

* **Default Communications Time Out (2 secs)**

Short Communications Time Out (1 secs)

Long Communications Time Out (4 secs)

Three Beeps on Time Out

---

* **No Beeps on Time Out**

Razzberry Tone on Time Out

---

* **No Razzberry Tone on Time Out**

Host Scanner Commands

Enable D/E Disable Command. - The scanner will disable scanning after it receives an ASCII “D” from the host device. It will enable scanning when it receives an ASCII “E”.

*** Disable D/E Disable.**

Enable Z/R Type D/E Simulation - The scanner will disable scanning after it receives an ASCII “Z” from the host device. It will enable scanning when it receives an ASCII “R”.

*** No Z/R Type D/E Simulation**

Enable F/L Laser Command - The scanner will turn *off* the laser after the scanner receives an ASCII “F” character. The laser will turn *on* after it receives an ASCII “L” character.

*** Disable F/L Laser Command**

Use DTR Scan Disable - The scanner will monitor the DTR input to determine if scanning should be allowed. A +12V “active” level enables decoding. A -12V “inactive” level disables decoding.

*** Do Not Use DTR Scan Disable** - Do not monitor the DTR input.

Activate DC2 Character - Scanning will be initiated with the receipt of a DC2 character (^R, 124).

*** Do Not Activate on DC2 Character**

Host Scanner Commands

Transmit Scanner ID byte with receipt of an "i" (69H) via RS232 - The ID byte is transmitted as 3 bytes (i.e. 0, 0, 1).

---

* **Don't Transmit Scanner ID byte with receipt of an "i" (69H) via RS232**

Transmit "NO READ" if DC2 Activated

---

* **Do Not Transmit "NO READ" if DC2 Activated**

No Green LED During "NO READ" Transmit

---

* **Green LED During "NO READ" Transmit**

Transmit Serial Number

Presentation and Trigger Modes

There are four configurable modes for scanning: the presentation mode, the multi-try trigger mode, the continuous trigger mode, and the single-trigger mode.

Presentation Mode

Presentation Wakeup

*** Multi-Try Trigger Mode**

Continuous Trigger Mode

Single Trigger Mode

** Factory Default Configuration*

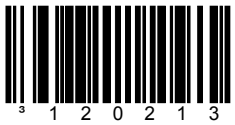
Omnidirectional and/or Linear Scanner Modes

The unit can be configured to operate as an omnidirectional scanner, or a linear scanner, or a combination of both. Trigger and presentation operations can be configured separately for Omnidirectional and Linear scan modes.

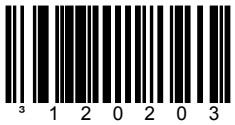
- *When configured to operate as an omnidirectional scanner*, all 1D and 2D barcodes are scanned omnidirectionally (except Code 128 scanner configuration labels, which have to be linearly aligned for successful scanning).
- *When configured to operate as a linear scanner*, the 1D barcodes have to be linearly aligned for successful scanning while the 2D barcodes cannot be scanned.
- *When configured to operate as both the linear and omnidirectional scanner*, the 1D barcodes have to be linearly aligned for successful scanning while the 2D barcodes are scanned omnidirectionally.

By default, the scanner is configured to omnidirectional scanning for trigger and presentation operations.

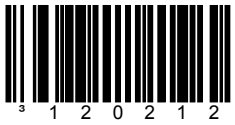
Enable Linear Only in *Trigger Operations*



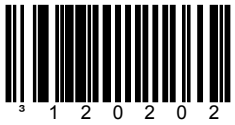
Disable Linear Only in *Trigger Operations*



Enable 1D Linear Only in *Trigger Operations*



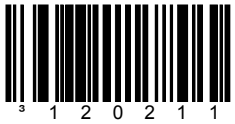
Disable 1D Linear Only in *Trigger Operations*



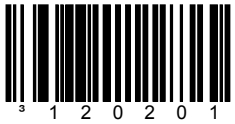
** Factory Default Configuration*

Omnidirectional and/or Linear Scanner Modes

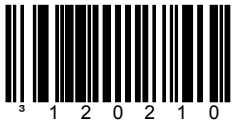
Enable Linear Only
in *Presentation Operations*



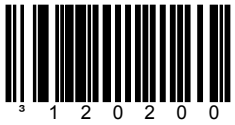
Disable Linear Only
in *Presentation Operations*



Enable 1D Linear Only
in *Presentation Operations*



Disable 1D Linear Only
in *Presentation Operations*



** Factory Default Configuration*

Aiming and Illumination

Trigger and presentation operations can be configured separately to use the unit's linear illumination as an aiming instrument.

* **Enable Aiming in *Trigger Operations***

Disable Aiming in *Trigger Operations*

* **Enable Aiming in *Presentation Operations***

Disable Aiming in *Presentation Operations*

* **Enable Auto Illumination**

Disable Auto Illumination

** Factory Default Configuration*

Aiming and Illumination

*** Enable Auto Gain**

Disable Auto Gain

Data Output

*** Enable Data Output**

Disable Data Output

** Factory Default Configuration*

Character Suppression

Enable the Suppression of 1 Character

*** Disable the Suppression of 1 Character**

To suppress 1 character:

1. Scan the *Enter/Exit Configuration Mode* bar code, on page 2.
2. Scan the *Enable the Suppression of 1 Character* bar code.
3. Scan the *Character 1* bar code (*below left*).
4. Scan the three code bytes that represent the character to be suppressed, on page 17.
5. Scan the *Enter/Exit Configuration Mode* bar code, on page 2.

Enable the Suppression of 2 Characters

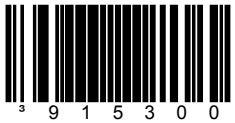
*** Disable the Suppression of 2 Characters**

To suppress 2 characters:

1. Scan the *Enter/Exit Configuration Mode* bar code, on page 2.
2. Scan the *Enable the Suppression of 2 Character* bar code above.
3. Scan the *Character 1* bar code (*below left*).
4. Scan the three code bytes, on page 17, that represent the 1st character to be suppressed.
5. Scan the *Character 2* bar code (*below right*).
6. Scan the three code bytes, on page 17, that represent the 2nd character to be suppressed.
7. Scan the *Enter/Exit Configuration Mode* bar code, on page 2.

Character 1

Character 2



** Factory Default Configuration*

Character Suppression (Code Bytes 0 – 9)

Code Byte 0

Code Byte 1

Code Byte 2

Code Byte 3

Code Byte 4

Code Byte 5

Code Byte 6

Code Byte 7

Code Byte 8

Code Byte 9

Same Symbol Timeouts

Retain Same Symbol Timeout on Trigger

The same-symbol timeout is not restarted when the trigger is pulled.

*** Reset Same Symbol Timeout on Trigger**

The same-symbol timeout is restarted when the trigger is pulled.

** Factory Default Configuration*

CODE TYPES AND DECODE RULES

∗Bar code descriptions marked with an asterisk (*) define a feature that is a factory default. Bar codes marked with a tilde (~) require the *Multi-Code* configuration method.

UPC/EAN

*** Enable UPC/EAN**

Disable UPC/EAN

*** Enable UPC-A**

Disable UPC-A

*** Enable UPC-E**

Disable UPC-E

*** Enable EAN-13**

Disable EAN-13

*** Enable EAN-8**

Disable EAN-8

CODE 128

* **Enable Code 128**

Disable Code 128

Enable UCC/EAN-128 ‘]C1’ Code Formatting

---

* **Disable UCC/EAN – 128 ‘]C1’ Code Formatting**

Ignore <FNC4> Code 128 Characters

---

* **Use <FNC4> to Determine Extended ASCII Characters**

CODE 39

* **Enable Code 39**

Disable Code 39

Enable MOD 43 Check Digit on Code 39 - The scanner only scans Code 39 bar codes that have a valid Modulo 43 check digit.

---

* **Disable MOD 43 Check Digit on Code 39**

Enable Full ASCII Code 39

---

* **Disable Full ASCII Code 39**

Enable PARAF (Italian Pharmaceutical Codes) Support - Code 39 bar codes are converted to PARAF format.

---

* **Disable PARAF Support**

---

* **Allow PARAF Codes Only**

Allow Non-PARAF Codes

Enable TRI-OPTIC Code

---

* **Disable TRI-OPTIC Code**

---

* **Use Standard Code 39 Framing**

Try Code 39 Codes Without 5 Bar Multiples

CODE 39

Enable ITF/Code 39 Filters

---

* **Disable ITF/Code 39 Filters**

Transmit MOD 43 Check Digit – with Self Service Library Code 39

---

* **Do Not Transmit MOD 43 Check Digit –** with Self Service Library Code 39

2 OF 5 CODES

* **Enable Interleaved 2 of 5 (ITF)**

Disable Interleaved 2 of 5 (ITF)

Enable MOD 10 Check on ITF - The scanner will only scan Interleaved 2 of 5 (ITF) bar codes that have a Modulo 10 check digit.

---

* **Disable MOD 10 Check on ITF**

Allow ITF Null Characters

---

* **Do Not Allow ITF Null Characters**

~ **ITF Symbol Length Lock 1** - To specify a 1st ITF symbol length lock, scan this bar code and the appropriate code bytes sequence located on page 71.

~ **ITF Symbol Length Lock 2** - To specify a 2nd ITF symbol length lock, scan this bar code and the appropriate code bytes sequence located on page 71.

~ **ITF Minimum Symbol Length** - To specify a minimum number of ITF characters to be decoded, scan the appropriate code bytes sequence located on page 71.

Enable Standard 2 of 5

2 OF 5 CODES

* **Disable Standard 2 of 5**

~ **Standard 2 of 5 Symbol Length -** To specify a minimum number of characters to be decoded, scan this bar code and the appropriate code bytes sequence located on page 71.

Enable Matrix 2 of 5

---

* **Disable Matrix 2 of 5**

Enable Matrix 2 of 5 Check Digit Requirement

---

* **Disable Matrix 2 of 5 Check Digit Requirement**

Enable 15 Digit Airline 2 of 5

---

* **Disable 15 Digit Airline 2 of 5**

Enable 13 Digit Airline 2 of 5

---

* **Disable 13 Digit Airline 2 of 5**

Enable Hong Kong 2 of 5

---

* **Disable Hong Kong 2 of 5**

CODABAR

* **Enable Codabar**

Disable Codabar

Enable Dual Field Codabar

---

* **Disable Dual Field Codabar**

CODE 93

* **Enable Code 93**

Disable Code 93

CODE 11

Enable Code 11

*** Disable Code 11**

*** Check for 1 Code 11 Check Digit**

Check for 2 Code 11 Check Digits

*** Do Not Check for 2 Code 11 Check Digits**

Check for 2 Code 11 Check Digits if Code Length is Greater Than 10 Characters

TELEPEN

Enable Telepen

*** Disable Telepen**

Enable ALPHA Telepen

*** Disable ALPHA Telepen**

PLESSEY CODES

Enable MSI Plessey

---

* **Disable MSI Plessey**

---

* **No MSI Plessey Check Digit** - Plessy bar codes will not be tested for a check digit.

Enable MSI Plessey MOD 10/10 Check Digit - Test MSI Plessey bar codes for a 2 digit Modulo 10 check digit.

---

* **Enable MSI Plessey Mod 10 Check Digit -** Test MSI Plessey bar codes for a 1 digit Modulo 10 check digit.

Enable UK Plessey

---

* **Disable UK Plessey**

Enabled UK Plessey A to X Conversion

---

* **Disabled UK Plessey A to X Conversion**

PLESSEY CODES

* **Standard Plessey Stop Characters**

Accept Bad Plessey Stop Characters

ISBT CODE 128 IMPLEMENTATION

Enable ISBT Code 128

Disable ISBT Code 128

These bar codes are used to enable/disable a special transmit mode as outlined in section 3.5.2 of the ISBT-128 Specification. This output method allows the user to confirm independently the accuracy of the Code-128 check digit.

Enable ISBT Special Transmit

Disable ISBT Special Transmit

These bar codes can be used to disable the transmission of the ISBT Code 128 data identifiers. When this option is selected, the first two data characters are removed from the data stream (ID characters) unless the ISBT bar code scanned contains the Donation Identification Number identifiers. In this instance only the first ID character is removed from the Donation ID Number. The second is regarded as normal data.

Don't Transmit ISBT ID's

*** Transmit ISBT Identifiers**

These bar codes are used to convert and transmit the Mode 37,2 check digit from the flag digits of the Donation Identification Number provided the check digit is contained in the flag digits. Transmission of the Donation Identification number will be the same except for the last two digits, which are converted into a single check sum character.

Convert Flag Digits to Mod 37, 2 CD

*** Normal Flag Digit Transmission**

RSS BAR CODE IMPLEMENTATION

Double Border Required - When scanning RSS bar codes, it is recommended that double border requirements be enabled because of the large spaces often found in RSS symbologies.

Enable RSS 14

---

* **Disable RSS 14**

---

* **Transmit RSS 14 Check Digit**

Do Not Transmit RSS 14 Check Digit

---

* **Transmit RSS 14 Application ID** - Application Identifier “01” is transmitted by default.

Do Not Transmit RSS 14 Application ID

---

* **Transmit RSS 14 Symbology ID** - Symbology Identifier “]e0” is transmitted by default.

Do Not Transmit RSS 14 Symbology

RSS Limited Bar Codes

Enable RSS Limited

---

* **Disable RSS Limited**

---

* **Transmit RSS Limited CD**

Do Not Transmit RSS Limited CD

---

* **Transmit RSS Limited Application ID** - Application identifier “01” is transmitted by default.

Do Not Transmit RSS Limited Application ID

---

* **Transmit RSS Limited Symbology ID** - Symbology identifier “]e0” is transmitted by default.

Do Not Transmit RSS Limited Symbology ID

RSS Expanded Bar Codes

Enable RSS Expanded

---

* **Disable RSS Expanded**

---

* **Transmit RSS Expanded Symbol ID** - Symbology identifier “]e0” is transmitted by default.

Do Not Transmit RSS Expanded Symbol ID

DATA MATRIX

Enable Normal Color Data Matrix Decoding

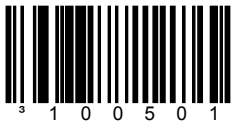
Enable Inverse Color Data Matrix Decoding

Enable Normal and Inverse Color Data Matrix Decoding

*** Disable Data Matrix Decoder**

Enable Rectangular Data Matrix Symbol Decoding

*** Disable Rectangular Data Matrix Symbol Decoding**



** Factory Default Configuration*

DATA MATRIX

Enable Low-Contrast Data Matrix Decoding†

Improves decoding† of low-contrast Data Matrix symbols.

*** Disable Low-Contrast Data Matrix Decoding**

Enable Data Matrix Non-Square Modules†

Improves decoding† of Data Matrix symbols when individual modules in the symbol are non-square.

*** Disable Data Matrix Non-Square Modules**

Enable Data Matrix Shifted Tiles†

Improves decoding† of Data Matrix symbols when the upper tiles in the symbol are shifted in the symbol relative to the bottom tiles.

*** Disable Data Matrix Shifted Tiles**

** Factory Default Configuration*

† *Enabling these options will increase decoding time for all bar codes.*

DATA MATRIX

*** Enable Data Matrix, Normal Size**

The following bar codes improve decoding of Data Matrix symbols when the length of a symbol size is small. To disable either of these options scan the *Enable Data Matrix Normal Size* bar code above.

Enable Data Matrix, Small Size†

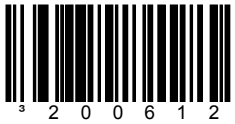
Enable Data Matrix Very Small Size†

** Factory Default Configuration*

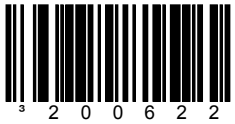
† *Enabling these options will increase decoding time for all bar codes.*

QR CODE

Enable Normal Video QR Code

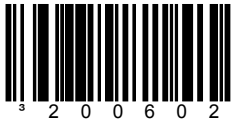


Enable Inverse Video QR Code



Enable Normal and Inverse QR Code

*** Disable QR Code**



2D structure append Off

*2D structure append Off

2D structure append On

2D structure append On

MAXICODE

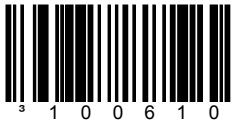
Enable MaxiCode

*** Disable MaxiCode**

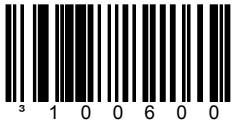
** Factory Default Configuration*

AZTEC

Enable Normal Video Aztec Decoding



*** Disable Normal Video Aztec Decoding**



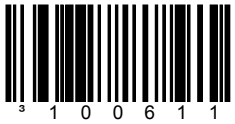
Enable Inverse Video Aztec Decoding

*** Disable Inverse Video Aztec Decoding**

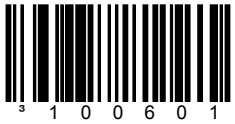
** Factory Default Configuration*

AZTEC

Enable Aztec Structure Append Decoding



*** Disable Aztec Structure Append Decoding**



When this feature is enabled, Aztec barcodes with a structured append header will be stored in the scanner's memory buffer. The scanner will transmit the concatenated message once every component of the structured append barcode has been read. Up to 16 components can be stored.

If this feature is disabled, Aztec barcodes with structured append header will be read as normal Aztec barcodes. However, in this case, the structured append header will be sent as part of the barcode data.

Code Select and structured append features cannot be used concurrently. If both CodeSelect and structured append are enabled, CodeSelect feature will not work.

The *CodeSelect timeout* setting determines how much time will be allowed between individual components of the same barcode (similar to CodeSelect operation).

By default, the scanner will emit an *intermediate beep* when each component is scanned. When only one scan buffer is enabled, the user will be required to release the trigger after reading each barcode component.

*** Enable Intermediate Beep**

Disable Intermediate Beep

If the "intermediate beep" is disabled and the number of scan buffers is increased – all components of a structured append barcode can be read with a single trigger activation, and only one audible beep will be produced, as if a regular barcode was scanned.

** Factory Default Configuration*

POSTAL

Enable Australia Post

*** Disable Australia Post**

Enable Japan Post

*** Disable Japan Post**

Enable KIX Code

*** Disable KIX Code**

** Factory Default Configuration*

POSTAL

Enable PLANET Code

*** Disable PLANET Code**

Enable POSTNET Code

*** Disable POSTNET Post**

Enable B & B' Fielded POSTNET

*** Disable B & B' Fielded POSTNET**

** Factory Default Configuration*

POSTAL

Enable UPU Decoding

*** Disable UPU Decoding**

Enable Royal Mail 4 Code

*** Disable Royal Mail 4 Code**

Enable Zero-FCC Australia Post

*** Disable Zero-FCC Australia Post**

** Factory Default Configuration*

CODABLOCK OPTIONS

Enable Codablock A

*** Disable Codablock A**

Enable Codablock F

*** Disable Codablock F**

PDF OPTIONS

**Enable Transmit \ as **

*** Enable Transmit \ as **

** Factory Default Configuration*

ADDITIONAL DECODE FEATURES

Enable Double Border Required / Large Intercharacter Space

---

* **Disable Double Border Required / Large Intercharacter Space**

Enable Small Border Required

---

* **Disable Small Border**

~ **Minimum Symbol Length** - Single-line default is 3. Combine this code with the proper code bytes (page 71), to specify the minimum number of characters in all non-UPC/EAN bar codes.

~ **Symbol Length Lock** - Combine this code with the proper code bytes, to lock the bar code's length into place.

Enable Modulus 8 Filter on Bar & Space Counts

---

* **Disable Modulus 8 Filter on Bar & Space Counts**

Handle Code 39 Bad Border

---

* **Disable Code 39 Bad Border**

CONFIGURABLE CODE LENGTHS

There are seven bar code lock lengths available. Specific code types can be assigned to a lock length. While in programming mode:

1. Scan the code *length* lock #1 bar code
2. Scan the three code bytes that represent the code length (page 71).
3. Scan the matching code *type* lock #1 bar code.
4. Scan the three code bytes that represent the code type.

This process can be repeated for lock lengths 2 through 7.

~ Code Length Lock #1

~ Code Type Lock #1

~ Code Length Lock #2

~ Code Type Lock #2

~ Code Length Lock #3

~ Code Type Lock #3

~ Code Length Lock #4

~ Code Type Lock #4

~ Code Length Lock #5

~ Code Type Lock #5

CONFIGURABLE CODE LENGTHS

~ Code Length Lock #6

~ Code Type Lock #6

~ Code Length Lock #7.

~ Code Type Lock #7.

SUPPLEMENTS

Enable Two Digit Supplements

---

* **Disable Two Digit Supplements**

---

* **Enable Two Digit Redundancy** - The scanner will scan the bar code plus the 2 digit add on twice before accepting data.

Disable Two Digit Redundancy

Enable Five Digit Supplements

---

* **Disable Five Digit Supplements**

Enable Five Digit Redundancy - The scanner will scan the bar code plus the 5 digit add on twice before accepting data.

---

* **Disable Five Digit Redundancy**

Supplements are Required - All UPC/EAN labels that are scanned must have a supplement.

---

* **Supplements are Not Required**

Enable Remote Supplement Required

---

* **Disable Remote Supplement Required**

SUPPLEMENTS

Enable Bookland (978) Supplement Required

---

* **Disable Bookland (978) Supplement Required**

Enable 977 (2 Digit) Supplement Required - The scanner will require a 2 digit supplement to be scanned when an EAN-13 code begins with 977.

---

* **Disable 977 (2 Digit) Supplement Required**

Enable 378/379 French Supplement Required

---

* **Disable 378/379 French Supplement Required**

Enable 414/419 German Bookland Supplement Required

---

* **Disable 414/419 German Bookland Supplement Required**

Enable 434/439 German Supplement Required

---

* **Disable 434/439 German Supplement Required**

Enable # System 2 Requires Supplements

---

* **Disable # System 2 Requires Supplements**

Enable UPC # System 5 Requires Supplements

---

* **Disable UPC # System 5 Requires Supplements**

SUPPLEMENTS

* **Enable 2 Digit Supplements with 37x, 43x, or UPC # System 5**

Disable 2 Digit Supplements with 37x, 43x, or UPC # System 5

---

* **Enable 5 Digit Supplements with 37x, 43x, or UPC # System 5**

Disable 5 Digit Supplements with 37x, 43x, or UPC # System 5

Enable Coupon Code 128

---

* **Disable Coupon Code 128**

Enable Code 128 ‘]C1’ Extended Code Format - The scanner transmits a ‘]C1’ at the beginning of the Code 128 portion of the coupon code.

---

* **Disable Code 128 ‘]C1’ Extended Code Format.**

Enable Code 128 Group Separators – A “GS” (1DH) character will be transmitted with coupon Code 128 codes.

---

* **Disable Code 128 Group Separators**

---

400 msec to Find Supplemental - The scanner will allot 400 milliseconds to *find* an add on after a main UPC/EAN bar code has been scanned.

---

200 msec to Find Supplemental - The scanner will allot 200 milliseconds to *find* an add on after a main UPC/EAN bar code has been scanned.

---

* **100 msec to Find Supplemental** - The scanner will allot 100 milliseconds to *find* an add on after a main UPC/EAN bar code has been scanned.

SUPPLEMENTS

Enable Code ID's with Supplements

---

* **Disable Code ID's with Supplements**

---

* **Beep Once on Supplements**

Beep Twice on Supplements

Enable ISBN Check Digit Transmission - Not available with all models.

Disable ISBN Check Digit Transmission

Enable Bookland to ISBN Conversion - Not available with all models

---

* **Disable Bookland to ISBN Conversion**

Enable ISBN Re-Formatting

---

* **Disable ISBN Re-Formatting**

Scan the *Enter Configuration Mode* bar code before trying to set these features (see the *Multi-Code Method* on page 2).

USER CONFIGURABLE PREFIXES, ALL DATA

~ **Configurable Prefix Character #1** - A prefix ID can be added and assigned for data transmission. Use this code with a code byte sequence (see page 71) that represents the desired character.

~ **Configurable Prefix Character #2** - Assigns a second configurable prefix character**.**

~ **Configurable Prefix Character #3** - Assigns a third configurable prefix character.

~ **Configurable Prefix Character #4** - Assigns a fourth configurable prefix character**.**

~ **Configurable Prefix Character #5** - Assigns a fifth configurable prefix character.

~ **Configurable Prefix Character #6** - Assigns a sixth configurable prefix character.

~ **Configurable Prefix Character #7** - Assigns a seventh configurable prefix character.

~ **Configurable Prefix #8** - Assigns an eighth configurable prefix character.

~ **Configurable Prefix Character #9** - Assigns a ninth configurable prefix character**.**

~ **Configurable Prefix Character #10** - Assigns a tenth configurable prefix character.

*** Clear All User Configurable Prefixes**

USER CONFIGURABLE ID CHARACTERS, CODE SPECIFIC

*** Use Configurable Code ID Bytes as Prefixes** - User configured, code specific ID bytes are transmitted before the data. If using prefixes, user configured suffixes cannot be used.

Use Configurable Code ID Bytes as Suffixes - User configured, code specific ID bytes are transmitted after the data. If using suffixes, user configured prefixes can not be used.

‡ Enter configuration mode then scan this bar code followed by the three code byte bar codes (page 71) that represent a unique ID character to be associated with this bar code type.

~ Configurable UPC-A ID ‡

~ Configurable UPC-E ID ‡

~ Configurable EAN-8 ID ‡

~ Configurable EAN-13 ID ‡

~ Configurable Code 39 ID ‡

~ Configurable Code 128 ID ‡

~ Configurable Code 93 ID ‡

~ Configurable Code 11 ID ‡

USER CONFIGURABLE ID CHARACTERS, CODE SPECIFIC

‡ Enter configuration mode then scan this bar code followed by the three code byte bar codes (page 71) that represent a unique ID character to be associated with this bar code type.

~ Configurable TRI-OPTIC ID ‡

~ Configurable Standard 2 of 5 ID ‡

~ Configurable Interleaved 2 of 5 ID ‡

~ Configurable Matrix 2 of 5 ID ‡

~ Configurable Airline 2 of 5 ID ‡

~ Configurable MSI Plessey ID ‡

~ Configurable UK Plessey ID ‡

~ Configurable Codabar ID ‡

*** Clear All Configurable Code Specific ID's** - Clears all unique ID characters previously identified**.**

Enable Teraoka ID

*** Disable Teraoka ID**

STANDARD PREFIX CHARACTERS

Enable STX Prefix - The scanner will transmit a Start of TeXt (ASCII 02H) before each bar code.

---

* **Disable STX Prefix**

Enable Rochford-Thomson Mode

---

* **Disable Rochford-Thomson Mode**

Enable AIM ID Characters

---

* **Disable AIM ID Characters**

Enable UPC Prefix ID - The scanner will transmit a prefix before any UPC/EAN bar code. The prefixes are A (UPC-A), E0 (UPC-E), F (EAN-13), and FF (EAN-8).

---

* **Disable UPC Prefix ID.**

Enable NCR Prefix ID - The scanner will transmit a prefix before the following code types. The prefixes are as follows: A (UPC-A), E0 (UPC-E), FF (EAN-8), F (EAN 13), B1 (Code 39) B2 (ITF), B3 (Code 128 and other codes).

---

* **Disable NCR Prefix ID**

Enable Nixdorf ID Characters - This option transmits code identities before each bar code for many Siemen/Nixdorf registers.

---

* **Disable Nixdorf ID Characters**

STANDARD PREFIX CHARACTERS

Enable SANYO ID Characters

*** Disable SANYO ID Characters**

Enable Manufacturer ID Prefix

*** Disable Manufacturer ID Prefix**

Enable "C" Prefix

*** Disable "C" Prefix**

Enable "$" Prefix ID for UPC/EAN

*** Disable "$" Prefix ID for UPC/EAN**

Enable Tab Prefix - The scanner will transmit a TAB (ASCII 09H) before each bar code.

*** Disable Tab Prefix**

Enable SNI Beetle Mode

*** Disable SNI Beetle Mode**

Enable Cipher 1021 IDs

*** Disable Cipher 1021 IDs**

STANDARD SUFFIX CHARACTERS

* **Enable CR Suffix** - The scanner transmits a carriage return after each bar code.

Disable CR Suffix.

---

* **Enable LF Suffix** - The scanner transmits a line feed after each bar code. *Disabled when keyboard wedge defaults are loaded*.

Disable LF Suffix.

Enable Tab Suffix - The scanner will transmit a TAB (ASCII 09H) after each bar code**.**

---

* **Disable Tab Suffix**

Enable ETX Suffix - The scanner will transmit End of TeXt (ASCII 03H) after the bar code date.

---

* **Disable ETX Suffix**

Enable UPC Suffix ID - The scanner will transmit a suffix after any UPC/EAN bar code. The suffixes are A (UPC-A), E (UPC-E), F (EAN-13) and F (EAN-8).

---

* **Disable UPC Suffix ID**

LONGITUDINAL REDUNDANCY CHECK

A Longitudinal Redundancy Check (LRC) is an error checking character that is calculated across a sequence of data characters. It is determined by eXclusive ORing (XOR) the characters to be checked, starting with an initial value of 00H.

The result, an "LRC byte" is then transmitted following the data stream and used by the receiving computer to determine if the information was received correctly. In the scanner's case, XOR is performed prior to adding parity bits.

When the LRC is enabled, the scanner defaults to starting the LRC on the second byte of information transmitted. Optionally, the calculation can start on the first byte transmitted.

Enable Transmit of LRC Calculation - The scanner outputs on LRC check character after the bar code.

*** Disable Transmit of LRC Calculation.**

*** Start LRC on First Byte** - The scanner will calculate the LRC check digit starting with the first character**.**

Start LRC on Second Byte - The scanner will calculate the LRC check digit starting with the second character.

BLOCK CHECK CHARACTER

*** Enable NCR BCC**

Disable NCR BCC

CHARACTER REPLACEMENTS

To replace a character:

1. Scan the *enter/exit configuration mode* bar code (page 2).
2. Scan the *character to replace code* (shown below).
3. Scan the ASCII code byte value of the character you wish to replace (refer to the ASCII Reference Table in the Code Byte Usage section of this manual).
4. Scan the *replacement character* bar code (shown below).
5. Scan the ASCII code byte value of the replacement character.
6. Scan the *enter/exit configuration mode* bar code (page 2).

~ Character to Replace

~ Replacement Character

No Replacement

USER CONFIGURABLE SUFFIXES, ALL DATA

Note: Scan the *Enter/Exit Configuration mode* code before trying to set this feature. Refer to *Multi-Code Method* on page 2.

~ **Configurable Suffix Character #1** - A suffix ID can be added and assigned for data transmission. Use this code with a 3 code byte sequence (page 71) that represents the desired character.

~ **Configurable Suffix Character #2** - Assigns a second configurable suffix character.

~ **Configurable Suffix Character #3** - Assigns a third configurable suffix character.

~ **Configurable Suffix Character #4** - Assigns a fourth configurable suffix character**.**

~ **Configurable Suffix Character #5** - Assigns a fifth configurable suffix character**.**

~ **Configurable Suffix Character #6** - Assigns a sixth configurable suffix character.

~ **Configurable Suffix Character #7** - Assigns a seventh configurable suffix character.

~ **Configured Suffix Character #8** - Assigns an eighth configurable suffix character.

~ **Configurable Suffix Character #9** - Assigns a ninth configurable suffix character**.**

~ **Configurable Suffix Character #10** - Assigns a tenth configurable suffix character.

*** Clear All User Configurable Suffixes**

SPECIAL FORMATS

Enable SINEKO Mode

---

* **Disable SINEKO Mode**

Enable Newcode Formatting Mode A

---

* **Disable Newcode Formatting Mode A**

Enable Newcode Formatting Mode B

---

* **Disable Newcode Formatting Mode B**

Remove All Leading Zero's

---

* **Don't Remove Leading Zero's**

Enable HCA Parsing

Disable HCA Parsing

UPC/EAN FORMATTING

* **Transmit UPC-A Check Digit**

Do Not Transmit UPC-A Check Digit

Transmit UPC-E Check Digit

---

* **Do Not Transmit UPC-E Check Digit**

Expand UPC-E to 12 Digits - Expand UPC-E bar codes to the 12 digit equivalent, UPC-A bar codes.

---

* **Do Not Expand UPC-E to 12 Digits**

Enable GTIN Formatting

---

* **Disable GTIN Formatting**

Convert UPC-A to EAN-13 - The scanner converts UPC-A to EAN-13 by transmitting a leading zero before the bar code.

---

* **Do Not Convert UPC-A to EAN-13**

Transmit Lead Zero on UPC-E - This option will transmit a zero before each UPC-E bar code.

---

* **Do Not Transmit Lead Zero on UPC-E**

CODE FORMATTING

Convert EAN-8 to EAN-13 - The scanner will transmit five zeros before the bar code to convert EAN-8 to EAN-13.

---

* **Do Not Convert EAN-8 to EAN-13**

---

* **Transmit UPC-A Number System**

Do Not Transmit UPC-A Number System

---

* **Transmit UPC-A MFR #**

Do Not Transmit UPC-A MFR #

---

* **Transmit UPC-A ITEM #**

Do Not Transmit UPC-A ITEM #

---

* **Transmit EAN-8 Check Digit**

Do Not Transmit EAN-8 Check Digit

---

* **Transmit EAN-13 Check Digits** - The scanner will transmit EAN-13 Check Digit.

Do Not Transmit EAN-13 Check Digit.

CODABAR FORMATTING

Transmit Codabar Start/Stop Characters - Transmits Codabar's Start/stop characters before and after each bar code.

---

* **Do Not Transmit Codabar Start/Stop**

Enable CLSI Editing - Works only with 14 digit Codabar type lengths. This option will perform CLSI type editing before the information is transmitted to the host.

---

* **Do Not Enable CLSI Editing**

Enable Codabar Mod-16 Check Digit

---

* **Disable Codabar Mod-16 Check Digit**

Enable Codabar "7-Check" Check Digit

---

* **Disable Codabar "7-Check" Check Digit**

---

* **Transmit Codabar Check Digit**

Don't Transmit Codabar Check Digit

CODE FORMATTING

CODE 39 FORMATTING

Transmit Mod 43 Check Digit on Code 39 - This feature works in conjunction with Mod 43 *Check Digit on Code 39* option, page 21. Both must be enabled for this feature to work.

*** Do Not Transmit Mod 43 Check Digit on Code 39**

Transmit Code 39 Stop/Start Characters - The scanner transmits Code 39's start and stop characters before and after each bar code.

*** Do Not Transmit Code 39 Stop/Start Characters.**

Transmit an "A" (41H) Prefix if Italian Pharmaceutical.

*** Do not Transmit an "A" (41H) Prefix if Italian Pharmaceutical**

CODE 11 FORMATTING

Transmit Code 11 Check Digit - This bar code will transmit Code 11 check characters when used with Enabled Code 11 page 26.

*** Do Not Transmit Code 11 Check Digit**

TELEPEN

Enable Convert Telepen ^L to E

*** Disable Convert Telepen ^L to E**

PLESSEY

Transmit UK Plessey Check Digit - The scanner will transmit UK Plessey Check Digit characters and must be used with the UK Plessey option.

---

* **Do Not Transmit UK Plessey Check Digit**

Enable UK Plessey Special Format

Disable UK Plessey Special Format

Transmit MSI Plessey Check Digit - This option works in conjunction with one or both of the Enabled MSI Plessey Mod options on page 27.

---

* **Do Not Transmit MSI Plessey Check Digit**

2 OF 5 CODE FORMATTING

Transmit Mod 10 Check Digit on ITF - The scanner transmits interleaved 2 of 5 (ITF) Mod 10 check character.

---

* **Do Not Transmit Mod 10 Check Digit on ITF** - Works in conjunction with Mod 10 check on ITF. Both must be enabled for this feature to work.

Transmit Matrix 2 of 5 Check Digit

---

* **Do Not Transmit Matrix 2 of 5 Check Digit**

USB

*** Enable USB Keyboard Emulation Mode**

Enable USB Serial Mode

Enable Barcode ID

Disable Barcode ID

Enable USB Reserve Code #1

Disable USB Reserve Code #1

Enable USB Reserve Code #2

Disable USB Reserve Code #2

Sears USB Defaults

Sears Aux Defaults

Enable IBM 1520 Code Flag Emulation -
UPC code ID and ITF code ID remain the same but all other code ID is transmitted as Code 39 (IBM OEM Scanner Modes).

Disable IBM 1520 Code Flag Emulation

KEYBOARD

ENABLE KEYBOARD EMULATION

Load Keyboard Wedge Defaults - Loads the default settings for keyboard wedge mode.

Enable Stand-Alone Keyboard Emulation - Use this with special stand-alone models that are not cabled for an external keyboard. Scan this bar code to enable the Stand-Alone Mode. The scanner will send keyboard "power on" information and configure hardware to simulate a constant keyboard connection.

---

* **Enable Keyboard Wedge Emulation** - Use this with an external keyboard. Transmit in wedge made to allow standard PC keyboards to communicate when no bar code data is available.

COUNTRY/SCAN CODE TABLE SELECTS

* **USA Keyboard**

Switzerland Keyboard

Spain Keyboard

Italy Keyboard

Germany Keyboard

France Keyboard

UK Keyboard

KEYBOARD

COUNTRY/SCAN CODE TABLE SELECTS

Belgium Keyboard.

Japan Keyboard.

IBM 4700 Financial Keyboard.

Sweden/Finland Keyboard

KEYBOARD/SYSTEM TYPE

***** **AT Keyboard** - Includes IBM PS/2 and compatible models 50, 55, 60, 80.

XT Keyboard - Special firmware in Voyager.

PS/2 Keyboard - Includes IBM PC and compatible models 30, 70, 8556.

Enable Terminal Keyboard Emulation.

Enable XT Keyboard for Mode 1 - Special firmware in Voyager.

Enable XT Keyboard for Mode 2 - Special firmware in Voyager.

'DUMB' TERMINAL SELECTIONS

Note: The following terminals may require custom cables.

IBM Terminal Keyboards

Reserved Terminal Keyboard #2

Reserved Terminal Keyboard #3

Reserved Terminal Keyboard #4

Reserved Terminal Keyboard #5

Reserved Terminal Keyboard #6

Reserved Terminal Keyboard #7

Reserved Terminal Keyboard #8

Lower Case Lock On - transmit all data as lower case.

*** Lower Case Lock Off**

SPECIAL KEYBOARD FEATURES

Transmit Make Code Only - Not available on all models.

---

* **Transmit Make/Break Code** - Not available on all models.

---

* **Transmit FOH Break Code** - The scanner will transmit the FOH in the break-code sequence.

Do Not Transmit FOH Break Code

Transmit Cleanup Bit - Use for certain NEC computers.

---

* **Do Not Transmit Cleanup Bit**

Enable Alt Mode - The scanner will duplicate the following keyboard sequence; *Hold down Alt key, Type decimal number that corresponds to the appropriate character.*

---

* **Disable Alt Mode** - Caution: If host software application uses the right Alt key as a “Hot” key, Alt mode must be disabled.

Enable Auto Detect Mode (AT/PS2) - Automatically detects caps lock status.

---

* **Disable Auto Detect Mode (AT/PS2)**

Enable Caps Lock (XT)

---

* **Disable Caps Lock (XT)**

SPECIAL KEYBOARD FEATURES

Send Numbers as Keypad Data - All data is sent as if it has been entered on a keypad.

---

* **Send Numbers as Normal Data**

Enable Reserved Feature

---

* **Disable Reserved Feature**

---

* **Use Extended ASCII To Send Extended Key Codes** - Use extended ASCII characters to send PC keyboard keys such as F1, F2, etc…

Use Extended ASCII Characters as Extended ASCII> - Transmit extended ASCII codes via Alt Mode.

---

* **Character KB Inhibit**

Message KB Inhibit

Enable Right Alt Key Sequencing

Disable Right Alt Key Sequencing

Enable LaCaixa Special Keyboard Prefix & Suffix Scan Codes

---

* **Disable LaCaixa Special Keyboard Prefix & Suffix Scan Codes**

INTERSCAN CODE DELAYS

* **InterScan Code Delay 800 msec** - The time specified represents the amount of time between individual 11 bit-scan codes. This parameter may need to be adjusted for operation with certain PC keyboard BIOS.

InterScan Code Delay 7.5 msec - This time specified represents the amount of time between individual 9 bit-scan codes. This parameter may need to be adjusted for operation with certain PC keyboard BIOS.

InterScan Code Delay 15 msec - The time specified represents the amount of time between individual 11 bit-scan codes. This parameter may need to be adjusted for operation with certain PC keyboard BIOS.

~ **Variable InterScan Code Delay msec** - Refer to *Multi-Code* Method on page 2. Sets value in 100 microsecond increments.

CONTROL SETS

In general, standard bar code symbologies will only encode the ASCII character set. Function keys, arrow keys and many other extended keys on an IBM compatible keyboard do not translate to ASCII characters. One method of 'bar coding' the extended keys is to substitute the extended key codes when a specific ASCII control character is found in the bar code stream. The Control Sets are specific translations of the ASCII (HEX) set.

Control Set #1

Enable Control Set #1

---

* **Disable Control Set #1**

Control Set #1

ASCII (HEX)	ASCII Control	Extended Key
00H	Null	Numeric Keypad + (Plus)
01H	SOH	Num Lock
02H	STX	Down Arrow
03H	ETX	Numeric Keypad- (Minus)
04H	EOT	Insert
05h	ENQ	Delete
06H	ACK	System Request
07H	BEL	→ (Right Arrow)
08H	BS	← (Left Arrow)
09H	TAB	Tab
0AH	LF	Caps Lock
0BH	VT	Shift Tab
0CH	FF	Left Alt
0DH	CR	Enter
0EH	SO	Left Control
OFH	SI	Up Arrow
10H	DLE	F1
11H	DC1	F2
12H	DC2	F3
13H	DC3	F4
14H	DC4	F5
15H	NAK	F6
16H	SYN	F7
17H	ETB	F8
18H	CAN	F9
19H	EM	F10
1AH	SUB	Home
1BH	ESC	Esc
1CH	FS	Page Up
1DH	GS	Page Down
1EH	RS	Print Screen
1FH	US	End

CODE BYTES USAGE

The features that use these code bytes for configuration require that the scanner be in *Configuration Mode*. The *Enter/Exit Configuration Mode* bar code (on page 2) must be scanned before starting the configuration cycle.

Example: User configurable prefix/suffix characters can be saved into the scanner by scanning the 3 digit decimal equivalent of the ASCII character into the appropriate character location with the code byte bar codes.

To add an Asterisk (*) as a Prefix scan the following bar codes in order.

1. *Enter/Exit Configuration Mode* (3 beeps)
2. Configurable Prefix #1 (1 beep)
3. Code Byte 0 (1 beep)
4. Code Byte 4 (2 beeps)
5. Code Byte 2 (3 beeps)
6. *Enter/Exit Configuration Mode* (3 beeps)

CODE BYTES 0-9

Code Byte 0

Code Byte 1

Code Byte 2

Code Byte 3

Code Byte 4

Code Byte 5

Code Byte 6

Code Byte 7

Code Byte 8

Code Byte 9

CODE BYTES USAGE

RESERVED CODES

~ **Enable Reserved Code**

~ **Disable Reserved Code**

CODE TYPE TABLE

DDD (Prefix)	(Dec)	(Hex)	Comment (Symbology)
002	2	02h	UPC-E
003	3	03h	EAN-8
004	4	04h	UPC-A
005	5	05h	EAN-13
012	12	0Ch	UPC-E + 2 digit supp
013	13	0Dh	EAN-8 + 2 digit supp
014	14	0Eh	UPC-A + 2 digit supp
015	15	0Fh	EAN-13 + 2 digit supp
022	22	16h	UPC-E + 5 digit supp
023	23	17h	EAN-8 + 5 digit supp
024	24	18h	UPC-A + 5 digit supp
025	25	19h	EAN-13 + 5 digit supp
032	32	20h	UPC-E + Coupon Code 128 Supplement
033	33	21h	EAN-8 + Coupon Code 128 Supplement
034	34	22h	UPC-A + Coupon Code 128 Supplement
035	35	23h	EAN-13 + Coupon Code 128 Supplement
080	80	50h	Code 39
081	81	51h	Codabar
082	82	52h	International 2 of 5
083	83	53h	Code 128
084	84	54h	Code 93
091	91	5Bh	MSI Plessey
092	92	5Ch	Code 11
093	93	5Dh	Airline 2 of 5 (15 digit)

CODE TYPE TABLE

DDD (Prefix)	(Dec)	(Hex)	Comment (Symbology)
094	94	5Eh	Matrix 2 of 5
095	95	5Fh	Telepen
096	96	60h	UK Plessey
097	97	61h	Airline 2 of 5 (13 digit)
098	98	62h	Standard 2 of 5
099	99	63h	Trioptic
101	101	65h	RSS-14
102	102	66h	RSS- Limited
103	103	67h	RSS- Extended
104	104	68h	PDF code
105	105	69h	Micro PDF
106	106	6Ah	Data Matrix
107	107	6Bh	Aztec Code
108	108	6Ch	QR Code
109	109	6Dh	MaxiCode
110	110	6Eh	PostNet
111	111	6Fh	PLANET
112	112	70h	UPU
113	113	71h	Australia Post
114	114	72h	Japan Post
115	115	73h	KIX
116	116	74h	Royal Mail 4 (British Post)
117	117	75h	Codablock A
118	118	76h	Codeblock F
119	119	77h	EAN-128
120	120	78h	USPS 4CB (OneCode)
121	121	79h	GoCode
160	160	A0h	OCR User Template
161	161	A1h	OCR Passport Template – Lower Row
162	162	A2h	OCR Passport Template – Upper Row
163	163	A3h	OCR ISBN Template

CODE TYPE TABLE

DDD (Prefix)	(Dec)	(Hex)	Comment (Symbology)
164	164	A4h	OCR Price Field Template
165	165	A5h	OCR MICR-E13B Template
166	166	A6h	OCR Visa A Upper line template
167	167	A7h	OCR Visa A Lower line template
168	168	A8h	OCR Visa B Upper line template
169	169	A9h	OCR Visa B Lower line template
170	170	AAh	OCR Travel Document 1 Upper line template
171	171	ABh	OCR Travel Document 1 Middle line template
172	172	ACh	OCR Travel Document 1 Lower line template
173	173	ADh	OCR Travel Document 2 Upper line template
174	174	AEh	OCR Travel Document 2 Lower line template

ASCII REFERENCE TABLE

HEX Value	Decimal Value/ Code Byte Value	Character	Control Keyboard Eqv
00	000	NUL	@
01	001	SOH	A
02	002	STX	B
03	003	ETX	C
04	004	EOT	D
05	005	ENQ	E
06	006	ACK	F
07	007	BEL	G
08	008	BS	H
09	009	HT	I
0A	010	LF	J
0B	011	VT	K
0C	012	FF	L
0D	013	CR	M
0E	014	SO	N
0F	015	SI	0
10	016	DLE	P
11	017	DC1	Q
12	018	DC2	R
13	019	DC3	S
14	020	DC4	T
15	021	NAK	U
16	022	SYN	V
17	023	ETB	W
18	024	CAN	X
19	025	EM	Y
1A	026	SUB	Z
1B	027	ESC	[
1C	028	FS	\

ASCII REFERENCE TABLE

HEX Value	Decimal Value/ Code Byte Value	Character	Control Keyboard Eqv
1D	029	GS	^
1E	030	RS	_
1F	031	US	space,blank
20	032	SP	
21	033	!	
22	034	“	
23	035	#	
24	036	$	
25	037	%	
26	038	&	
27	039	‘	apostrophe
28	040	(	
29	041	)	
2A	042	*	
2B	043	+	
2C	044	,	comma
2D	045	-	minus
2E	046	.	period
2F	047	/	
30	048	0	number zero
31	049	1	number one
32	050	2	
33	051	3	
34	052	4	
35	053	5	
36	054	6	
37	055	7	
38	056	8	
39	057	9	
3A	058	:	
3B	059	;	

ASCII REFERENCE TABLE

HEX Value	Decimal Value/ Code Byte Value	Character	Control Keyboard Eqv
3C	060	<	less than
3D	061	+	
3E	062	>	greater than
3F	063	?	
40	064	@	shift P
41	065	A	
42	066	B	
43	067	C	
44	068	D	
45	069	E	
46	070	F	
47	071	G	
48	072	H	
49	073	I	letter I
4A	074	J	
4B	075	K	
4C	076	L	
4D	077	M	
4E	078	N	
4F	079	O	letter O
50	080	P	
51	081	Q	
52	082	R	
53	083	S	
54	084	T	
55	085	U	
56	086	V	
57	087	W	
58	088	X	
59	089	Y	

ASCII REFERENCE TABLE

HEX Value	Decimal Value/ Code Byte Value	Character	Control Keyboard Eqv
5A	090	Z	
5B	091	[	shift K
5C	092	\	shift L
5D	093	]	shift M
5E	094	^	à,shift N
5F	095	_	♣, shift 0, underscore
60	096	‘	accent grave
61	097	a	
62	098	b	
63	099	c	
64	100	d	
65	101	e	
66	102	f	
67	103	g	
68	104	h	
69	105	I	
6A	106	j	
6B	107	k	
6C	108	l	
6D	109	m	
6E	110	n	
6F	111	o	
70	112	p	
71	113	q	
72	114	r	
73	115	s	
74	116	t	
75	117	u	
76	118	v	
77	119	w	
78	120	x	

ASCII REFERENCE TABLE

HEX Value	Decimal Value/ Code Byte Value	Character	Control Keyboard Eqv
79	121	y	
7A	122	z	
7B	123	{	
7C	124	|	vertical slash
7D	125	}	alt mode
7E	126	~	(alt mode)
7F	127	DEL	delete, rubout

EXTENDED KEY CODE REFERENCE TABLE

Key	At Scan Code	PS2 Scan Code	3151	Prefix/Suffix Value Hex = Decimal
↑	75H	48H	63H	80H = 128
↓	72H	50H	60H	81H = 129
→	74H	4DH	6AH	82H = 130
←	6BH	4BH	61H	83H = 131
Insert	70H	52H	67H	84H = 132
Delete	71H	53H	64H	85H = 133
Home	6CH	47H	6EH	86H = 134
End	69H	4FH	00H	87H = 135
Page Up	7DH	49H	00H	88H = 136
Page Down	7AH	51H	00H	89H = 137
Right Alt	11H	38H	00H	8AH = 138
Right Ctrl	14H	1DH	39H	8BH = 139
Reserved	00H	00H	00H	8CH = 140
Reserved	00H	00H	00H	8DH – 141
Numeric Keypad Ente	5AH	1CH	79H	8EH = 142
Numeric Keypad/	4AH	35H	00H	8FH = 143
F1	05H	3BH	07H	90H = 144
F2	06H	3CH	0FH	91H = 145
F3	04H	3DH	17H	92H = 146
F4	0CH	3EH	1FH	93H = 147

EXTENDED KEY CODE REFERENCE TABLE

Key	At Scan Code	PS2 Scan Code	3151	Prefix/Suffix Value Hex = Decimal
F5	03H	3FH	27H	94H = 148
F6	0BH	40H	2FH	95H = 149
F7	83H	41H	37H	96H = 150
F8	0AH	42H	3FH	97H = 151
F9	01H	43H	47H	98H = 152
F10	09H	44H	4FH	99H = 153
F11	78H	57H	56H	9AH = 154
F12	07H	58H	5EH	9BH = 155
Numeric +	79H	4EH	00H	9CH = 156
Numeric -	7BH	4AH	7CH	9DH = 157
Numeric *	7CH	37H	00H	9EH = 158
Caps Lock	58H	3AH	14H	9FH = 159
Num Lock	77H	45H	00H	A0H = 160
Left alt	11H	38H	00H	A1H = 161
Left Ctrl	14H	1DH	11H	A2H = 162
Left Shift	12H	2AH	12H	A3H = 163
Right Shift	59H	36H	59H	A4H = 164
Print Screen	Multiple	00H	00H	A5H = 165
Tab	ODH	OFH	0DH	A6H = 166
Shift Tab	8DH	8FH	65H	A7H = 167
Enter	5AH	1CH	5AH	A8H = 168
ESC	76H	01H	08H	A9H = 169
Left ALT Make	11H	36H	00H	AAH = 170
Left ALT Break	11H	B6H	00H	ABH = 171
Left CTRL Make	14H	1DH	00H	ACH = 172
Left CTRL Break	14H	9DH	00H	ADH = 173
*Left ALT + 1 character	11H	36H	00H	AEH = 174
*Left Crtl + 1 character	14H	1DH	00H	AFH = 175
*Send			58H	C0H = 192
Clear			6FH	C1H = 193
Jump			76H	C2H = 194
Send Line			7EH	C3H = 195

EXTENDED KEY CODE REFERENCE TABLE

Erase EOF	6DH	C4H = 196
Send – Make Only	58H	C5H = 197

*Example:

1st Configurable Prefix = 174
2nd Configurable Prefix = 065
Scanner will transmit <left ALT Make> “A” <Left ALT Break>

NEED TO START OVER?

Scan the *Recall Default* bar code. This will erase all previous settings and return the scanner to its default communication protocol.

Recall Defaults